

FIG. 1

0049387-1209
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Client

HTTP

Request

Response

Container

JSP Page

```
<html>  
<jsp:useBean id="clock"  
              class="calendar.jspCalendar" />  
<ul>  
<li>Day: <%=clock.getDayOfMonth() %>  
<li>Year: <%=clock.getYear() %>  
</ul>  
</html>
```

Figure 2

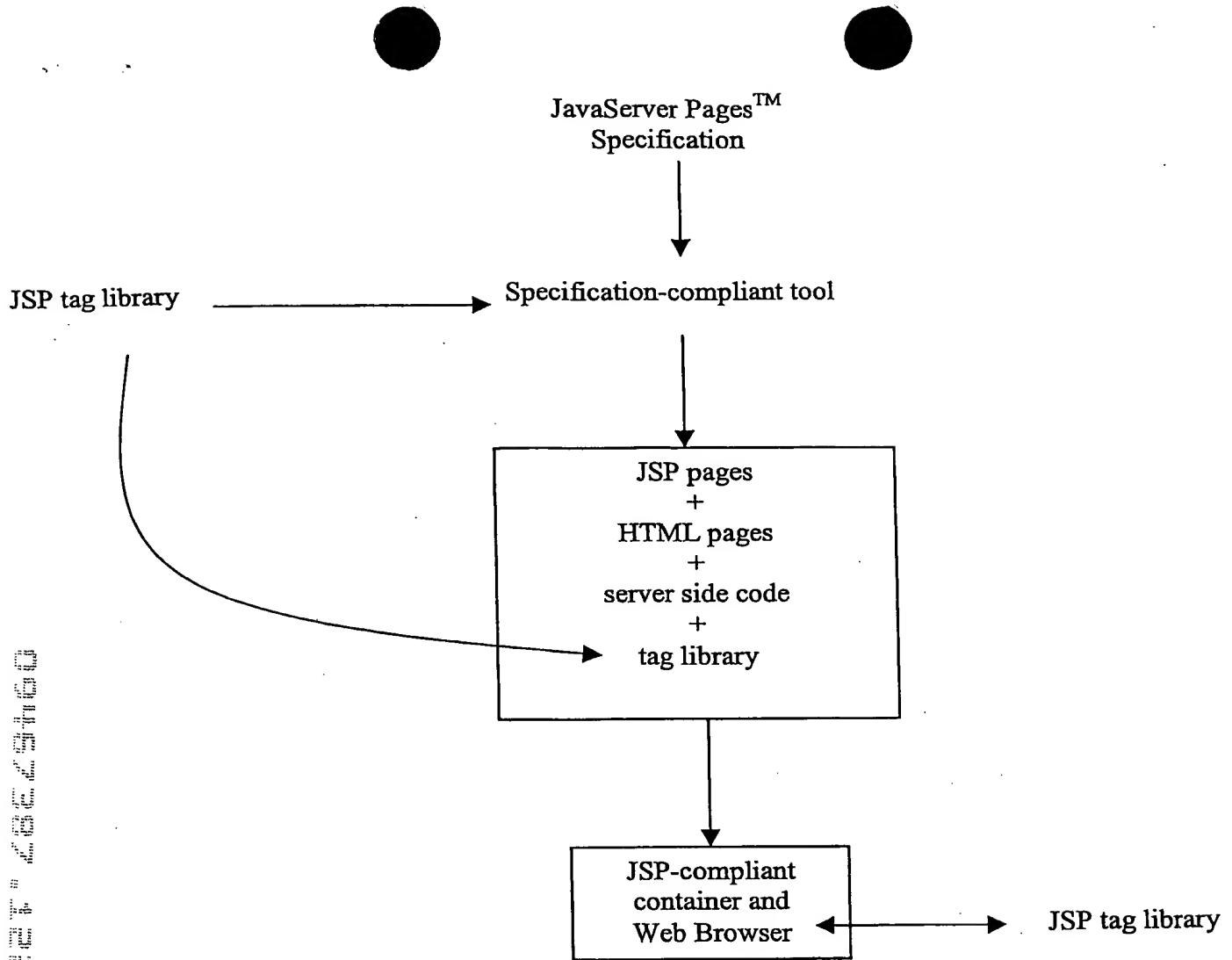


Figure 3

JSP Page

```
stuff1  
  
<foo>  
    stuff2  
</foo>  
  
stuff3
```

translation

Java Code

```
class TheJSPPage {  
  
    run ( request, response) {  
        out.println("stuff1")  
  
        k = new Closure (stuff2)  
        f = new FooImpl (k)  
        f.doIt (out)  
  
        out.println("stuff3")  
    }  
}
```

Tag Library

```
class FooImpl {  
  
    FooImpl (Closure k) {  
        this.k = k  
    }  
  
    doIt(Stream out) {  
        k.invokeClosure(out);  
        // all this is pseudo-code  
        // there is no Java mechanism  
        // for this  
    }  
}
```

Figure 4

```
b = f.doStart ()  
  
    if (b)  
repeat: Evaluate the Body  
  
    b = f.doBody ()  
  
    if (b) goto repeat  
  
f.doEnd ()
```

Fig. 5

JSP Page

```
stuff1  
  
<foo>  
    stuff2  
</foo>  
  
stuff3
```

translation

Java Code

```
class TheJSPPage {  
  
    run ( request, response) {  
        out.println("stuff1");  
        boolean b;  
  
        f = new FooImpl();  
        b = f.doStart();  
        if (b) {  
repeat:  
            stuff2;  
            b=f.doBody();  
            if (!b) goto repeat;  
            f.doEnd();  
        }  
        out.println("stuff3")  
    }  
}
```

Tag Library

```
class FooImpl {  
    // data like "out" is available via  
    // methods not shown here  
    doStart() {  
        // stuff to do on start  
    }  
  
    doBody() {  
        // stuff to do after a body  
        // evaluation  
    }  
  
    doEnd() {  
        // stuff to do on end  
    }  
}
```

Figure 6